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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/529,742

01/06/2006

Hiroshi Shiho

268844USOPCT

8533

22850

7590

02/09/2007

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ALEXANDRIA, VA 22314

EXAMINER

CHEN, KIN CHAN

ART UNIT

PAPER NUMBER

1765

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/09/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/529,742	SHIHO ET AL.	
	Examiner	Art Unit	
	Kin-Chan Chen	1765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>032905:062805</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa (US 2002/0173231).

Hasegawa teaches a polishing pad for a semiconductor wafer, which comprises a substrate for a polishing pad provided with a through hole penetrating from surface to back, a light transmitting part fitted in said through hole. Hasegawa teaches that the light transmitting part comprises a water-insoluble matrix material and a water-soluble particle dispersed in said water-insoluble matrix material, and wherein a content of said water-soluble particle may be 10 to 90% by volume based on 100% by volume of the total amount of said water-insoluble matrix material and said water-soluble particle.

Unlike the claimed invention, Hasegawa does not teach the water-soluble particle is not less than 0.1% by volume and less than 5% by volume. However, Hasegawa points out that when the content of the water-soluble particle is less than 10% by volume, which encompasses the claimed range, a sufficient amount of pores are not

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formed and a removal rate tends to be lowered [0048]. Since the benefits and drawbacks are known, one ordinary skill would be motivated to select either greater than 10% or less than 10% depending on which benefits/drawbacks they are willing to accept. Applicants are reminded that a non-preferred embodiment does not distinguish over the prior art since non-preferred embodiments constitute prior art.

As to dependent claims 2 and 3, Hasegawa teaches that crosslinked polymer may be crosslinked 1,2-polybutadiene. See abstract.

As to dependent claim 4, Hasegawa teaches that light transmitting part may be thinned. See Figs. 13, or 15-19.

As to dependent claim 5, see [0010].

As to dependent claim 7, Hasegawa teaches that a supporting layer laminated on a backside of said polishing pad for a semiconductor wafer, wherein said laminate body has light transmitting properties in a laminated direction. See [0090].

As to dependent claims 10 and 11, see [0090][0093][0097][0098].

As to claims 6 and 8, Hasegawa ([0048][0090][0091][0093][0096]-[0099]) teaches a polishing pad for a semiconductor wafer, which comprises a substrate for a polishing pad provided with a through hole penetrating from surface to back, a light transmitting part fitted in said through hole, and a fixing layer formed on a backside of at least said substrate for a polishing pad among said substrate for a polishing pad and said light transmitting part for fixing to a polishing apparatus, wherein said light transmitting part comprises a water-insoluble matrix material and a water-soluble particle dispersed in said water-insoluble matrix material, and wherein a content of said

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water-soluble particle is within the claimed range. Hasegawa also teaches a supporting layer laminated on a backside of at least said substrate for a polishing pad among said substrate for a polishing pad and said light transmitting part. Hasegawa is silent about using a fixing layer formed on a backside of said supporting layer for fixing to a polishing apparatus. However, Hasegawa [0096][0098][0099] teaches that the polishing pad (or a laminated body) is fixed on the surface plate, which is considered a part of polishing apparatus. As such, it would have been obvious to one with ordinary skill in the art to apply the fixing layer on a backside of the supporting layer in order to fix the pad to the polishing apparatus.

As to dependent claims 13 and 14, see [0093].

As to dependent claim 15, see [0097][0098].

As to dependent claims 16 and 17, the discussion from above is repeated here.

Hasegawa also teaches a supporting layer laminated on a backside of the polishing pad, wherein the laminated body has light transmitting properties in a laminated direction, which comprises a process of detecting a polishing endpoint by the use of an optical endpoint detecting apparatus specifically, [0090],[0091],[0093].

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language. (* filing after Nov. 29, 2000*)

Claim Rejections - 35 USC § 102

4. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Shiho et al. (US 2004/0118051).

Shiho teaches a polishing pad for a semiconductor wafer, which comprises a substrate for a polishing pad provided with a through hole penetrating from surface to back, a light transmitting part fitted in said through hole. Hasegawa teaches that the light transmitting part comprises a water-insoluble matrix material and a water-soluble particle dispersed in said water-insoluble matrix material, and wherein a content of said water-soluble particle may be 0.1% to 90% by volume based on 100% by volume of the total amount of said water-insoluble matrix material and said water-soluble particle, which encompasses the claimed range. See [0040].

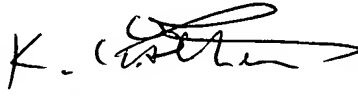
As to dependent claims 2 and 3, Shiho teaches that crosslinked polymer may be crosslinked 1,2-polybutadiene. See [0029], line 2.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kin-Chan Chen whose telephone number is (571) 272-1461. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

February 1, 2007


Kin-Chan Chen
Primary Examiner
Art Unit 1765